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THE JOURNAL OF PHILOSOPHY
PSYCHOLOGY AND SCIENTIFIC METHODS

THE THEORY OF VALUES

THE problem of values has been in the front ranks of the battle-line so persistently during recent years that it may seem desirable to let it rest in peace for a while. It has been attacked from all sides, and some claim to have vanquished it. It still seems to have some life, however; in fact, its very hardiness invites attention. It is evidently a vital problem in current thought, and the events in Europe seem to have revived rather than extinguished its vitality.

The problem of goods, good and the Good, is an ancient one for philosophy, but it was not until comparatively recently that psychology became interested in it. Apparently it did not like the terms "good" and "goods," perhaps because of their metaphysical and theological connotations, perhaps because of their "objectivity," so it adopted and adapted terms which were better suited to its purposes, namely, "value" and "worth." Both of these terms and much of the psychological interest in them were derived from the economists, especially from those of the German psychological school. The economists in Germany who were interested in developing the relations of the so-called "subjective" elements to economical problems found the problem and theory of values and their relation to price, goods and utility a fertile field for psychological speculation; the problem soon outgrew the limitations of economics and was taken up by the psychologists proper, like Ehrenfels and Meinong. In the hands of the psychologists there soon sprang up a whole new vocabulary of values; we hear of "*Wertgefuehl*," "*Gefuehl des absolut Wertvollen*," "worth predicates." "value judgments," "worth experience."

Evidently, then, the problem of values arose quite independently of ethical theory. Ethical theory was at the time not very hospitable to the scientific methods which the psychologists were trying to introduce, nor were the psychologists very eager to become entangled in transcendentalism and its formal ethics. On both sides, therefore, there was a tendency to let each go his own way. The psychologists,

for example, not wishing to be mixed up with normative ethics, discovered the science of "axiology." After this parting of the ways, fortunately or unfortunately, the roads continued to diverge. Both ethics and psychology were apparently bound for the same place, the determination of human goods, but each claimed to know the way better than the other and so they parted. They have remained apart to the present day; the problem of values has remained for the most part an independent problem even in recent discussion. There are, however, signs to-day of a reconciliation.

Meanwhile the psychologists developed several theories of value, all more or less closely related because the same methods were employed. Ehrenfels and Meinong were the leaders in Germany, and in this country Professor Urban, whose book is the most available example of this method. The problem was attacked with the usual methods and aims of structural psychology. The first thing to do was to find a *basis* for values. It was evident that the basis was to be found in the "dispositional element," that is, in some mental element like feeling or desire. This fundamental element of values having been found, it remained to analyze the structural elements of value judgments, and the relation of these to the objects to which they referred. In short, the problem was one of analysis of structural elements of consciousness, of their combinations and relations.

Even in the more experimental methods a similar procedure was followed. Likes and dislikes, satisfactions and dissatisfactions, were taken as elements, abstracted from their natural environment, and discussed in their abstraction, but not *as* abstractions. The familiar experiments with judgments, especially "esthetic judgments," suffer from this abstraction, but more will be said of this later.

In contrast to this approach of the problem there came another with a different ring. There is something about the problem of values, and even about the term "value" itself, which makes one approach it with awe and reverence. There is something religious about it. One feels as though one were in the presence of something of the utmost importance. Of course there is imbedded in it all the enthusiasm which is evoked by such expressions as "The Supreme Good," "The Vocation of Man," and one can not help feeling a thrill, or at least a shiver, at expressions like "der Begriff des absolut Wertvollen als Grundbegriff der Moralphilosophie." But this ethical enthusiasm is heightened by the religious sense of importance which hovers about "Value." This is evidenced by the keen interest which students of the philosophy and psychology of religion have taken in the problem. Religion, some say, is primarily a conserver of values. Psychologists of religion find it a valuable aid to point out the "im-

portance," the "value" of certain religious ideas; their "value" is often used as an apology for their crudity.

It will become evident later how natural this feeling of importance is to the problem of values, but what is significant here is that this appreciative attitude toward the problem of values was separated and made distinct from, and in a sense opposed to, a "descriptive" psychology, and sought as companions idealistic epistemology, absolutistic metaphysics, and theology. The analytic psychology with its splitting and resplitting, its abstractions and distractions, soon robbed the value concept of its glamour. It is therefore quite to be expected that the more appreciative interest in the problem, having been banished from psychology, should seek a more hospitable habitat. An example of this attitude is Professor Münsterberg's "Philosophie der Werte," otherwise known as "The Eternal Values." It is the old story of the flower, the botanist, and the artist: the botanist claims that he *really knows* the flower, which the artist immediately denies, and claims for himself. Professor Münsterberg is, however, more condescending. He recognizes the necessity of both approaches to the problem. Says he: "They supplement each other completely, representing the two fundamental aspects under which the problem of values can be studied. Professor Urban's work is positivistic and the other idealistic; the one therefore deals with the relativistic aspect of our values, the other with the values as absolute realities; the one is psychological, the other epistemological; the one analyzes and explains the facts, the other aims towards a teleological system."

A glance at the first page or two of Professor Münsterberg's *The Eternal Values* gives us the setting of the book. It begins:

"Is there anything in the world valuable in itself? That is our question. Of course there are many things which we value because you or I like them, or because they are useful for a certain purpose; they are helpful to us. But such values depend upon our special standpoint. A thing may be useful to me and useless to my neighbor. It may be agreeable to our social group, but disagreeable to other nations or to other ages. Even the truths of to-day were not the truths of yesterday and may not be valued as truth to-morrow. . . . Everything seems to depend on individual standpoints, upon individual desires. Truth is nothing but that which helps us to fulfil our purposes; beauty is nothing but that which appeals agreeably to our senses; morality is nothing but useful prescriptions which secure comfort for our particular social groups; religion is nothing but suggestions which give us hope. In short, our so-called values seem to be merely means to personal gratification, changing from

age to age, from people to people, from group to group, from man to man.

"Outspoken or not, that is the philosophical creed of the overwhelming majority of thinking persons to-day. The faithful believer, to be sure, feels that his religion really brings him in contact with something which is absolutely valuable. The moral man who sacrifices his life to follow the call of duty believes in his deepest heart that the moral deed is of absolute value. The artist who creates a thing of beauty imagines that his inspiration, too, opens to him a world of absolute values. The social reformer and the statesman, the pioneer and the captain of industry, when they work and fight for the progress of mankind, feel that the human advance is something absolutely valuable. The judge when he serves on the bench is filled with the belief that it is absolutely valuable to have justice prevail among men. And in the midst of his scholarly research the seeker for truth is indeed uplifted by the conviction that the full truth is something eternally valuable. But all these convictions and beliefs, these faiths and inspirations, must fade away, it seems, as soon as the philosopher begins to examine them. He shows that they are nothing but illusions which pleasantly deceive the striving men, and that in reality no absolute values exist. Everything is relative, everything is good only for a certain purpose, for a certain time, for a certain group, for a certain individual. Goodness and beauty and progress and peace and religion and truth merely have pragmatic value. They help us to our personal ends. Our ideals and our lives are of no value in themselves. What we dream of eternal values should simply be explained psychologically like the fancies of a fairy-tale. Philosophical skepticism and relativism are thus the last word, and their answer harmonizes with a thousand disorganizing tendencies of our time" (pp. 1–2).

I have quoted at some length, because these passages seem to me to give the setting not only of this book, but of much recent discussion in general. We find the contrast, so strikingly brought out here, constantly cropping out; it seems to be fundamentally the contrast of the "states-of-consciousness" psychology *versus* metaphysical ethics. The most significant words in the above quotation are the "nothing but"s the "merely"s—"truth is *nothing but* that which helps us fulfil our purposes; values are *merely* means of personal gratification; goodness and beauty and progress and peace and religion and truth *merely* have pragmatic value." Psychology and empiricism have to bear the odium of the "merely" and the "nothing but."

Now this odium has rebounded with considerable force upon the absolutists. It is now not surprising to hear of "nothing but abso-

lute," "merely static," "merely eternal" values. This turn has been accomplished largely at the hands of the functional psychology and pragmatism, and has meant a bringing together again of ethics and psychology with relation to the problem of values. It has meant a fresh working out of the problem in terms neither of abstracted mental elements nor in terms of idealistic sentimentality, but in terms of activity as conditioned by natural and social environment. Functional psychology is antithetical, on the one hand, to the structural, states-of-consciousness psychology, and on the other to "eternal" absolutism. It demonstrates the fact that the approaches of Münsterberg and Urban are not the only two and complementary approaches. By refusing to separate the internal and external worlds by a stone wall it is forced to deal neither with "merely personal satisfactions" nor with "eternal absolutes."

The contributions of this new approach to the theory of values are significant and far-reaching. I shall attempt in the following pages to gather together a few of the suggestions and results of recent discussions which seem to mark decided advances in the theory of values, and which promise to be fruitful in the future.

Let me first suggest that we think of the adjective "valuable" as primary and not the noun "value." Values occur in nature, as the chemist might say, in the adjectival form "valuable," as attributes of objects. The noun most immediately derived from the adjective would be "a valuable," *i. e.*, we might call objects which possess the quality "valuable" "valuables." Then we might speak of the quality "valuable" abstractly and call the quality "value," just as we derive hardness from hard, and whiteness from white. The term "value" in this sense, as an abstract noun (valuableness), denotes a quality; or, as Aristotle would say, it is not an *οὐσία*, but a *ποιότης*. But current usage has also identified the term "values" with "valuables," so that one can often hardly tell which of the two meanings is employed, and considerable confusion has resulted. It is rather difficult to see how one could speak of values in the plural in the sense of "valuableness" unless one were speaking of different kinds of value quality. On the whole, I think, the term "value," when used concretely (a value, values, *etc.*), is used in the sense of "something valuable," "a valuable object." I shall attempt to keep this distinction, and where I do not substitute the terms "valuables" or "valuableness" the context will, I hope, make clear whether the term is used concretely or abstractly.

The next question is: How do objects become valuable? or to put it in a less misleading form: How do valuables come to be? We might expect to find the simplest occurrences of values in the simplest forms of nature, in inorganic nature. We might, for example,

speak of the sun as valuable for warming a stone, *i. e.*, from the standpoint of warm-stone the sun is valuable in so far as it can warm the stone. Similarly we might speak of any cause as valuable for producing the effect which it can produce under certain circumstances. But here we are speaking of value in the very broad sense of potentiality. Anything is valuable with respect to its possibilities under changed circumstances. We can at least say that without change value would be impossible; but I think if we examine the situation more closely, we will find another element. An object must be valuable not only *for* something, but *to* something, or better said, in order that an object become valuable for something it must be valuable to something. To return to our illustration, unless there is a situation in which the stone exists as to-be-warmed there can be no value of the sun as a stone-warming object. If value is to be predicated of the sun as a stone-warming object, it must be valuable to some such situation. Now we can search inorganic, lifeless nature high and low and not find such a situation. The stone simply is; it is not *for* anything. It is not to-be-warmed any more than it is to-be-broken. Inorganic nature seems to be indifferent to values. It is only when we put the stone and sun in relation to some activity in which the stone functions as something-to-be-warmed that the sun becomes a possessor of value.

When we turn to organic nature, to organisms, we find such activity. We find objects grouping themselves with reference to the plant or the animal as valuable or not valuable for carrying on certain activities. Carbon dioxide becomes valuable *to* the plant *for* making food. The plant by virtue of its being an organism which carries on selective activity has created a situation to which valuables are relevant, and just as natural as they are relevant.

The same sort of situation confronts us when we turn to human nature-values. We have here selective activity of the most complex type. We have active interests, tendencies, desires, conations, adaptations, call them what you will, directed toward definite ends. Things are known, acquire meaning, as furthering or thwarting these interests; goods and bads, valuables and not-valuables are the result. Functional psychology and pragmatist logic have made us so familiar with this conception that it is useless to dwell on it here.

The value situation, then, consists of (1) a valuable object, (2) an organism or activity to which it is valuable (or by which it is valued), (3) an end or purpose for which, with a reference to which it is valuable.

All three of these factors seem to me to be essential to the value situation; and yet even a summary review of the leading theories of value reveals the fact that it has been customary to neglect one or

more of these factors in dealing with the value situation, and the methods and results have been warped accordingly. The subjective idealists and introspective psychologists found values to be products of human consciousness, determined by human desire and feeling. The other factors of the situation were straightway forgotten and discussion centered upon the mental content of the value-judgment. Valuation *per se* was studied; the object valued, the specific end for which it was valued were deemed irrelevant or even non-existent. Immediately the cry of "relativism and subjectivism!" was raised by the absolute idealists and the realists. We must have independent values. This led to an over-emphasis of the valuable objects as independent of human wants and interests. And thus the dispute over the objectivity *versus* the subjectivity of values was carried on, a duplicate of the dispute over qualities. Of course human values are relative to human activity and desire, but that is no ground for despising them as *merely* subjective. Would irrelative, or, to put it a little stronger, irrelevant values be any better? Of course values are objective, both in that they are *of objects* and in that they are controlling and guiding factors of human experience; but why should value, therefore, be an eternal quality of certain objects independently of the relations of these objects to practical situations? There is no need of dealing with values in terms of subject and object. If only values were taken as they occur naturally, specifically, and practically, much useless discussion might be avoided.

On the side of experimental psychology there has been a similar failure to take in the whole situation. For the purposes of experimentation certain factors of the value situation have been selected and others rejected as irrelevant, and so the results of the experiments have been misleading, or at least unilluminating. Most of the experiments on judgments of evaluation have had to do with so-called esthetic values, judgments of likes and dislikes, agreeableness and disagreeableness. The subject is required to arrange in order of merit a number of colors, figures, sounds, anything. The question to be asked is: Is it pleasing or displeasing? Which is more satisfactory? Which do you like better? *etc.* But supposing the subject should ask: "Better for what?" "Which is more pleasing, scarlet or drab?" "Pleasing for what? for a house, for a dress, for a sunset or for a bedroom?" "No matter," the experimenter would say, "not pleasing for anything in particular, just pleasing in general." But are things pleasing or displeasing, satisfactory or unsatisfactory, likable or not, *just in general?* Are not these judgments in practise relevant to a particular situation? Genuine evaluations are never made "in general"; the values always refer to

something specific, they are valuable *for* something. And so to ask: Which of these is more valuable? without saying *valuable for what,* is embarrassing to say the least. It robs the valuation of all its genuineness. It may be possible to tabulate the results of these experiments and get certain correlations and agreements, but do they indicate anything significant about values? This abstraction of valuation is characteristic of practically all of the experimental study of judgments of evaluation and renders them of little significance for the study of values and valuation as they really occur. The same method has been applied to determining the relative value of different types of values, but more will be said of this later.

The present need is that psychology study values at home, in their natural and specific situations. They can not be rightly studied as abstractions; they must be studied in their functional relationships, and this involves a study of all three factors of the value situation in their proper and specific relations.

With this conception, then, value appears essentially as that quality of an object by virtue of which it becomes a means to an end. Now means and end are relative terms. The same thing may be viewed now as means, now as end; when viewed as means it is valuable in so far forth. This relation of means to end implies selective activity. In inorganic nature and the lower forms of life we see ends, if we may call them so, or potentialities realized directly and without mediation. Means and end are fused into potentiality, and from the point of view of actuality, to use Aristotelian terminology, this potentiality may be called valuable in a very broad sense, as we saw before. But in the higher forms of life and especially in man, ends and means become constantly more and more distinguished. The more purposive activity becomes the more mediate it becomes. Means are not only increased in number, but are made more refined and subtle. Herein, we might say, lies the whole history and progress of mankind. This whole process of increased consistency and refined purposiveness of activity means a multiplying and manifolding of value situations. For the complexity of human values is produced not so much by the multiplication of ends as by the multiplication of means for attaining ends, or, more accurately, by the transformation of ends into means. Primitive nature reveals a multitude of potentialities actualized, but there is little coordination of these processes, there is no way in which the actualization of potentialities can be made cumulative. But in human activity we have a very advanced type of cumulative activity; one end is made to serve another; values are organized and made to serve a common purpose. In other words, in the passage from primitive nature to

human nature, the "valuable *to*" and the "valuable *for*" elements in the value situation become increasingly separate and distinct.

The question arises here: Are not ends as ends valuable? Must we not predicate value of those things after which we strive just because we strive after them? Are not human ends goods in themselves? It has been frequently maintained and is still widely held that that is just what constitutes values and goods, that they are good-in-themselves, valuable *per se*. That is, for instance, Münsterberg's contention, as we saw. "Is there anything in the world valuable in itself?" And accordingly his list of eternal values includes things, persons, valuations, nature, history, *etc.* To some minds this would seem far too pluralistic; they would find *The Eternal Value*. At any rate, the search for the highest good has been a favorite sport among philosophers ever since the days of Aristotle.

Aristotle, it seems, knew what he was talking about. He tells us a good is that at which a thing aims: health is the good of medicine, a ship the good of the ship-building art; well-being, welfare, is accordingly the good of man, as social being, and since this includes all that aims at a good in the most general sense he calls it *the* Good, the thing aimed at *par excellence*. Now that is all very clean-cut and intelligible. But when Aquinas and Kant and Mill and the others began talking about good and *the* Good, it meant an entirely different thing, and when they tried the same trick, apparently, that Aristotle did, it didn't work very well. The trouble was that they were speaking of a different kind of good. For instance, the utilitarian good, to which we may confine ourselves for the present purpose, is not "that at which a thing aims," but "that which is useful." Goods in this sense, that which is useful, we have called values, valuables.

Now it is of this kind of goods that men have asked: What is the supreme Good? or as they say now, the highest Value? Let us see what the implications of this conception are. We might speak of the highest value empirically, *i. e.*, it might be possible theoretically to compare all valuables and to arrange them in order of merit according to their comparative value in all kinds of situations, the number of situations in which they are valuable, *etc.* The one which came out at the top of the list might be called the highest value. But no one ever tried to arrive at a highest value of this sort, for not only would it be practically impossible, but there would be no motive for finding it. For it would in no sense be absolute or eternal, since with changing situations it might be superseded; nor would it be valuable *par excellence* in every situation, since in any specific situa-

tion another object might be more valuable. No, the highest value is not highest in this sense; it is highest in that it is absolutely, eternally, independently valuable. For our conception of values this implies that the highest value would have to be of the greatest value for anything to anybody in any situation. What sort of a thing might answer to this description might be interesting for speculation, but what concerns us here is that if there should be such a supreme value its claim must rest upon an empirical basis, and this is *prima facie* impossible; for who would attempt to analyze all or even approximately all possible situations in which values arise, in the hope of finding some value universally greater than any other? The same is true of any number of such eternal values. Of course love, happiness, loyalty, reason, anything may be hypostatized as values, but that is not very good psychology. These may be significant as motives, interests, or ends, but they are not for that reason eternal values, nor values at all. It is difficult for me to imagine just what is meant when ends as ends are spoken of as values. They don't seem to come under the value category. It is conceivable that human ends might be viewed as useful, as means, by some other kind of experience like that of a bird or of the absolute, for instance; but within the realm of human experience it is only as our ends are viewed as capable of leading to something else, some further human end, that value can be predicated of them. Thus we might grant that well-being is the chief good, that at which all things aim, but *as such* it need not be *the* or even *a* value. It may be invaluable, but not valuable.

The great objection which lies at the heart of all opponents to relative values is that relativity furnishes no criterion of judgment between true and false valuations. If values are relative to human desire, any desired object is a value, apparent values are called true; black is made white, evil is called good, and "all's well with the world." Hence the "merely" which is attached to the term "relative" signifies not only philosophic scorn, but moral indignation. In order to vindicate, if possible, the character of the relativist let us see whether and how he distinguishes true from apparent values. The relativist would reply to the absolutist by asking: How else could the truth of a valuation be established except by relating it to a specific situation and judging its adequacy to fulfil its function in it? In other words, value can be apparent or genuine only with relation to experience and in experience, and it is precisely because the relativist is interested in putting values to work and thus testing them, that he makes human values relative to and relevant to human experience. Relativism does not imply identification of the desired and the desirable. If an object desired as a value turns out upon reflection or experience to fail to measure up to the situation, it is

recognized as valued falsely. Strictly speaking values, like facts, are neither true nor false, they simply *are;* it is valuation which is true or false. The details of the verification of valuations need not be discussed here, as they have been emphasized by pragmatism in connection with the general theory of truth and thought. It need merely be pointed out that the critique of valuation is ultimately the business of intelligence applied concretely. Only with the growth of intelligence and intelligent discrimination can valuation become more accurate and efficient. There is no ready-made, universal, *a priori* touchstone which can be applied for judging values; there is no short-cut to truth. Genuineness of valuation must be discovered by constant mental labor.

The establishing and relating of *types of values* has always been one of the most vital aspects of the problem of values. The traditional types are economic, ethical, esthetic, religious, logical, biological, and perhaps one or two more. It is not easy to make out the psychology of this differentiation of values. There seems to be a trace of the old faculty psychology in it; one might say religious values are the object of the religious faculty, esthetic values of the esthetic faculty, *etc.* It is quite easy to see how economic values came to be regarded as a distinct type, for the economists were among the first to become interested in the problem of values. The value of the economists came to be expressed in terms of exchange, and was thus differentiated from the others. As to the other types, they seem to have originated by each of the branches of philosophic study, ethics, esthetics, *etc.*, claiming a value all its own. In whatever way these types may have come about, it is quite evident that not much psychology is at the bottom of the classification.

Attempts have been made by experimental and other methods to make a scale of human values. The experimental method usually consists in asking a large number of persons which they would rather be: a thief, a dunce, a pauper, an infidel, a recluse, a dullard, or a corpse. The answers are tabulated and an "empirical scale of values" results. This is the same method as the pleasant-unpleasant order of merit method mentioned above, and deserves the same criticism. The values are abstracted from their natural setting and then arranged as a scale in their abstraction. A scientific, psychological classification of values has not been worked out and can not be attempted here. But disregarding for the present the traditional types, we may gather some light on the problem from our analysis of the value situation.

Now it will be evident that we could classify values from the three different standpoints. First of all we might distinguish different kinds of valuables, *i. e.*, the kind of objects which may have the value quality. From this standpoint we might reach some such

classification as the following: (1) Physical Objects, *e. g.*, tools, food, clothes, pianos, rosaries. (2) Concepts or Mental Processes, *e. g.*, the recalling of a name, the hearing of a symphony, the thought of home, the hope of heaven. (3) Activities, such as earning money, singing a song, taking a walk. The second might be classed under the third. (4) Social Institutions, *e. g.*, a family, a government, a convention. We might keep on, but a shorter way of saying all this would be to say that any kind of thing whatsoever could conceivably be valuable in some situation or other.

Secondly we might classify values according to the things *to* which they are referred. From this standpoint we could distinguish between (1) Plant values, objects valuable to plants: (2) Animal values. Under and above animal values we would put (3) Human values: and of these we might distinguish between (a) Individual values, objects viewed as valuable to an individual, (b) Social or institutional values, those valuable to a society or institution as such. At this point some would no doubt add Absolute values, objects valuable to an absolute experience, *etc.* But we shall be more modest, and confine ourselves to the types of terrestrial values.

Then there is a third standpoint from which values might be classified, namely, that of the purpose or end *for* which a thing is valuable. But here we come upon a diversity which practically defies classification. The ends for which things are valuable are specific ends. It is meaningless to attempt to classify the ends of activity on any other than a specific basis; ends simply do not exist *ueberhaupt.* To speak of the ends of activities in a general way, *ueberhaupt,* with reference to values, is meaningless, and yet this is usually at the basis of the traditional classifications. To attempt a classification of the ends of actions specifically is, if not wholly impracticable, at least beyond the scope of this paper.

There is still another standpoint which may be adopted for distinguishing types of value, and this is, I think, the standpoint adopted by the traditional classification; at least it represents what the traditional classification aims to do, or is thought to aim to do. We may attempt to classify values in the abstract, not concrete values; *i. e.*, instead of classifying valuables, classifying types of value quality. Economic value and religious value are supposed to designate different *kinds of value quality.* What has been described as the value situation, they tell us, represents but one kind of value, "merely" utilitarian value. There is, they say, for example, also value *per se,* things valuable in themselves. This is a different kind of value quality. Its objects are valuable not because they are useful, but because they simply are valuable. Thus, they say, it is possible to distinguish types of value quality, like the colors of the spectrum. My objection to this is that there is a tendency and a danger to rob

the term "value" of its definitive meaning; the meaning of "value" is stretched unduly and made to embrace meanings which are not native to it. The original distinctions are not kept in mind and the term becomes meaningless.

Enough has been said in the way of tentative classification of values to bring out one point, and that is the most significant for our present purposes, namely, that the one way to distinguish types of values is to distinguish functions in specific value situations. Anything may be any kind of a value, depending on its function in a specific situation. Types of values can not be distinguished absolutely and independently of circumstances, nor can anything be assigned to one type of value universally. Values are by nature particular and can not be classified abstractly without reference to specific situations.

The same criticism would apply to the more general classification of values as higher and lower. Religious, ethical, and esthetic values are usually called higher values, and the biological, *e. g.*, lower. But this absolute denomination of values as higher and lower is as impossible and as impractical as any absolute scale of values. The only possible intelligible meaning of highest or lowest value is the object which is most or least valuable, respectively, *in a given situation.* And so if we wish to speak of highest or higher values, we must qualify by saying, given a certain situation, experience and reflection show that *X* is of the highest value, or of higher value than *Y*.

We can not leave the subject without indicating the problem of values as standards and controlling agencies of human conduct. That values control our conduct is not a moral ideal, but an empirical fact. But it is quite as evident that the valuations which govern our conduct are for the most part made *for* us, not *by* us, *i. e.*, they are factors in our social environment, rather than products of our individual intellectual discrimination. Now since social valuations are usually the products of chance and circumstance, and not of intelligent discrimination, it follows that social valuations are not necessarily the best attainable. The moral problem of values is, then, to develop accuracy of valuation, to organize values for greater effectiveness, to put values to work with a view to discovering and utilizing the knowledge thus gained. Social arrangements and organizations must seek to profit by the values which intelligence discovers; values must be constantly adapted to the fulfilment of human needs and purposes. This, we saw, is the business of intelligence constantly and concretely applied. And this takes us back to the educational problem, that of developing in the individual skill and accuracy of intellectual discrimination. Education must not merely impress and impose on the individual ready-made social valuations as standards; it must seek to develop in him the technique of true valuation. Society must not

be content to conserve its existing law and order by means of education; it must seek to make the fruits of education the means for its progress.

We have seen how the psychology of values emerged as an attempt to develop a scientific theory of human goods over against the absolutistic ethical theory. We have sketched its progress and noted its social significance. It has served the cause of progress; it has emphasized the need for revaluation and reorganization of social activities. We have also seen how, on the other hand, the psychology of values has been pressed into service to bolster up the very thing to which it constituted a reaction. Certain values have been apotheosized and given absolute significance; they are viewed as things to be conserved. The plea here is that the psychology of values should not turn traitor to its own cause by becoming a conservative and conservator. A scientific psychology must realize that when it is dealing with values it is dealing with progressive forces. Values are instruments of progress, and without change in the direction of progress they lose their function and meaning. A value is not an absolute unchanging piece of reality, but a characteritsic of nature by means of which organic activity is made possible and carried to its perfection.

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BEHAVIORISM AND GENETIC PSYCHOLOGY

I HAVE been asked to review the new edition of Hobhouse's *Mind in Evolution*.[1] I shall attempt to do so by describing my reaction to the psychological situation in which Thorndike,[2] Hobhouse,[3] and Watson[4] are centers of widely influential initiative.

When, in 1901, Hobhouse's book was published, I was a behaviorist of the Watsonian variety, for I considered introspection a futile method and attention to the subjective unfavorable to the progress of natural science. In the development of the science of behavior (since called by Watson behaviorism) along narrowly biological lines, I foresaw the progress of psychology. I must have felt quite as con-

[1] L. T. Hobhouse. *Mind in Evolution*, London, Macmillan and Company, 1915. Pp. xix + 469. Second edition, revised and enlarged. The first edition of the work appeared in 1901.

[2] E. L. Thorndike. *Animal Intelligence*, New York, The Macmillan Company, 1911. This book contains the author's chief contributions to comparative psychology.

[3] *Development and Purpose* as well as *Mind in Evolution*.

[4] J. B. Watson. *Behavior: An Introduction to Comparative Psychology*. New York, Henry Holt and Company, 1914.

fident of the value of my position as does Watson to-day, for when *Mind in Evolution* fell into my hands, I dismissed it with scant courtesy and meager attention. With a strange mingling of amusement and shame, I now confess that on the first page of the preface of my copy appear the marginal criticisms "theorist" and "bum." It was nearly fifteen years before I finished reading the volume! Could any objectivist have reacted more "behavioristically"?

How different my reaction to the revised edition! I read it at once with extreme interest, discussed its materials with a group of advanced students, and when the invitation to review it came, I welcomed the opportunity.

Nevertheless, I must insist that I am still a behaviorist, for I believe in the importance of the scientific study of behavior and am more deeply interested in it than in any other scientific activity. Is it not true that, as in the case of our philosophies, there are behaviorisms and behaviorists? Watson has set before us his particular opinions concerning the study of behavior in its relations to physiology and psychology. His point of view is not new, neither is it lacking in value; but I submit that his *Psychology as the Behaviorist Views It*[5] should have been entitled *Psychology as a Behaviorist Views It.*

To put it briefly, Watson is interested in organic behavior and its evolution. He regards the presuppositions and the methods of physical science as adequate for the solution of the problems of psychology. He dogmatically asserts this adequacy and refuses to admit the possible value of other presuppositions, methods, points of view. In my opinion, his is an "illiberal attachment"[6] to an assemblage of ideas which is in itself valuable, but which certainly does not monopolize the profitable possibilities of psychology or physiology.

As contrasted with Watson, Thorndike and Hobhouse strive to command the methods and materials of physiology, as well as those of psychology as commonly defined, in the interests of genetic psychology. They are not willing to accept Watson's pronouncement; instead, while recognizing the extreme value of the methods which he upholds, they insist on freedom to employ any or all other methods which promise to advance our knowledge of the genesis of mind.

Yet another significant point must be made. Whereas Watson insists that the psychologist should work with physical tools and those alone on sensible modes of energy, Hobhouse believes, and in this he is not alone, in psychic energy, and contends that the solution of the

[5] *Psychological Review*, 1913, Vol. 20, p. 158.

[6] I use the expression with grateful acknowledgment to Mr. Samuel McChord Crothers.

chief problems of psychology demands its detection and the devising of means of measuring it.[7]

Watson's behaviorism is simply and solely the physiology of organic activity. I, for one, am not willing to admit that this constitutes all that there is or may be of a scientifically profitable genetic psychology. Thorndike, like Hobhouse, has retained an open-mindedness or liberality of view which contrasts most strikingly with that of Watson. Each seeks through the study of all observable phenomena new light on the problems of the development and evolution of mental life.

Mind in Evolution is a discussion of certain fundamental problems of genetic psychology and of materials which contribute to their solution. Thus its author bridges the gap between the first edition and the revision of his important work:

"In the years that have elapsed since the first edition was published, the subject of comparative psychology has undergone a great change. It is hardly too much to say that, owing to the activity of a group of workers in the American universities, the investigation of the animal mind has, roughly within this period, established for itself a place among the recognized sciences. Hence much that was within the hands of pioneers when this book was first written, has now been thoroughly examined. Much, of course, still remains undetermined. In some material respects I have found it necessary to modify opinions formed on the data available in 1900. In particular, the observations of Mr. H. S. Jennings have shown me that something of the nature of mind is to be carried further down in the organic world than I supposed. His results, together with other work in general psychology, have led me, however, to extend rather than to narrow the view taken in the first edition of the function of mind in evolution, and even to raise the question whether mind (in the infinitely varied forms of its activity from the groping of unconscious effort to the full clearness of conscious purpose) may not be the essential driving force in all evolutionary change. In any case, the revolution which has overtaken biological theory during the same period is profound. Its significance is as yet imperfectly grasped, but it will, I believe, be found, as time goes on, to have invested the constitution of the living being as against the environing conditions with a new importance, and in this constitution the fundamental fact everywhere is that the living being is not passive, but active, not mechanical in its reaction to things, but assertive, plastic, and, in a measure proportioned to its development, self-determining. If this is so, psychology will in the future have a larger part to play than has hitherto been supposed in the study of the rise and decay of forms of life."

[7] *Mind in Evolution*, p. 398.

In this new edition several chapters have been substantially altered, chiefly as the above quotation indicates, because of newly discovered facts, and in addition, two new chapters have been introduced—the one on "Mind and Mechanism," the other on "Conation." There is also a new appendix, which deals with the Elberfeld horses.

The title *Mind in Evolution* has a double meaning. It refers at once to the process of mental evolution and to the function of mind in organic evolution. Hobhouse is interested in both, but a careful reading of his book indicates that the general problem of the rôle or function of mind interests him more deeply than do questions of fact in psychogenesis. *Mind in Evolution*, however, is devoted, primarily, to a consideration of the course of the evolution of mind. It outlines mental evolution in the animal kingdom, and by appeal to the facts of human and infrahuman psychology develops the outline into a system of genetic psychology. For some reason the author has depended almost wholly upon the facts of animal psychology for his construction, neglecting in a surprising way the materials of ontogenetic psychology, of psychopathology, and of social psychology. This task of tracing the course of mental evolution and of discovering the function of mind in evolution is indeed a strange one for a philosopher, publicist, and essayist, but our author has performed, or rather is performing, it with amazing insight and skill, albeit with inadequate knowledge of experimental methods and the literature of the various branches contributory to genetic psychology.

Since the original edition of *Mind in Evolution* appeared so long ago, a brief sketch of the book may not be superfluous.

The author points out that two types of correlation appear in organic behavior: the mechanical and the mental. The former is not influenced by the results of an act; the latter is so influenced. The mental factor—efficient in behavior—is called by Hobhouse conation. It is describable as an "uneasiness" which "tends to pass into some other mental state." Conation, and hence consciousness, in all probability is coextensive with life (p. 397), but its correlating function tends to increase in importance throughout "orthogenic evolution."

The organism is defined as "a structure which maintains, reproduces, and develops itself by coordinated conations, the basis of the conations and their coordination being laid by the inherited arrangement of the structure" (p. 37).

Some internally initiated organic activities and certain externally initiated reflexes are uninfluenced by their own results, but all instinctive and intelligent activities are to greater or less extent influenced by conational consciousness. Intelligence, as contrasted with instinct, involves more or less complete and explicit awareness of the end or purpose of an act. Behavioristically expressed, it is "the

power of an organism to adapt action to requirement on the basis of its own experience" (p. 108).

The principal stages in the correlation of behavior are thus designated and briefly described by Hobhouse.

I. *Correlation by Heredity.*—This is racial and slow. Although not intelligent, it is "an indirect correlation of experience, reaction, and welfare" (p. 396).

II. *Correlation by Coexistent Conditions.*—This involves a new factor, conation, traces of which are found in very low forms of animal life. It serves to render more plastic and efficient hereditary correlations (p. 399).[8]

III. *Correlation Based on Individual Experience.*—This is intelligence. There are four great stages.

Stage 1. Inarticulate correlation. At this stage a feeling, in conjunction with random or instinctive activity, modifies subsequent reactions. For instance, after a few reactions to the situation, a spider refuses the fly which has been dipped in turpentine. Ethically considered, such a form of response is impulsive.

Stage 2. Concrete experience and the practical judgment. At this stage, the "related term" appears as consciousness. Discrimination becomes obvious. Motor ideas function. Events are in a measure anticipated. But the organism's adaptability appears to be limited to its concrete environment and to immediate practical ends (p. 403).

Ethically, impulse is replaced by desire, at this stage, and the beginnings of deliberation and self-control appear. The work of intelligence from this stage onward is the correlating "of articulate complexes in the perceptual order."

Stage 3. Conceptual thinking and will.

Stage 4. Rational system.

The above scheme of mental evolution is rather cleverly clothed by Hobhouse from the available store of behavioristic facts, but it will undoubtedly repel many readers as too highly and extravagantly speculative. Were one to attempt a justification of the plan, it would necessarily be along lines of suggestion and stimulation of experimental inquiry.

Returning, now, to a bit of history in connection with the work of Hobhouse—it was in 1899 and just in time for use by the author of *Mind in Evolution* that Thorndike published his experimental studies in animal intelligence. In order to solve certain psychological problems and to help to complete our knowledge of mental evolution, Thorndike had studied experimentally the behavior of certain birds

[8] The reader should bear in mind that Hobhouse regards conation as an effective process, dependent in all probability upon psychic energy.

and mammals. His work was that of the pioneer; his conclusions were at variance with those commonly accepted; and his results contradicted those previously recorded in naturalistic studies of animals.

Hobhouse, with keen interest in the problems which Thorndike had attacked, reacted negatively to certain of his results and to many of his conclusions. He went further and questioned the reliability of certain of the observations, while arguing also that the facts do not necessarily justify the conclusions.

Whereas, Thorndike, in the light of his experimental findings, deems ideational processes as of infrequent occurrence and of slight importance in connection with the behavior of animals other than the primates, Hobhouse finds in the observations of others and in the results of certain crucial experiments which he planned and executed for himself, abundant evidences of ideation in various other mammals as well as in the monkeys and anthropoid apes.

Naturally enough, then, Hobhouse refused to build upon the data offered in Thorndike's monograph. Instead, he formulated certain problems as of fundamental importance to his scheme of mental evolution and forthwith set out to solve them by the aid of simple experimental procedures. His subjects were dogs, cats, monkeys, an ape, an otter, and an elephant.

Thorndike's experimental technique is unquestionably open to adverse criticism, and one may doubt the representativeness or even the reliability of certain of his results. There is slight probability that he has discovered the maximum capacity of the species of animal studied. It, therefore, is not unlikely that Hobhouse is correct in certain of his critical surmises. But his experiments have not yielded satisfactory grounds for the rejection of Thorndike's chief conclusions. Hobhouse is least of all a master of the technique of animal experimentation. His conditions of observation were crude; his observations themselves few and imperfectly checked. That he was unaware of several common sources of error is apparent. For instance, he seems not to have seriously considered the possibility that his presence might supply cues to correct response, yet the pet animals, especially cats and dogs, with which he was working would persistently seek such cues.

Thorndike has put the matter rather too strongly when he says "The possibility is that animals have *no images or memories at all, no ideas to associate.* Perhaps the entire fact of association in animals is the presence of sense-impressions with which are associated, by resultant pleasure, certain impulses, and that therefore, and therefore only, a certain situation brings forth a certain act."[9] Indeed, elsewhere he has importantly qualified this surmise. For

[9] *Psych. Rev. Mon. Supp.*, 2, No. 4, p. 73.

example, he writes: "My opinion would be that animals *do* have representations and that such are the beginning of the rich life of ideas in man. For the most part, however, such are confined to specific and narrow practical lines. There was no evidence that my animals habitually *did* form associations of ideas from their experience throughout, or that such were constantly revived without the spur of immediate practical advantage."[10]

Hobhouse's position contrasts sharply with the above, for concerning his observations, he writes: "The experiments suggest that animals learn by attention to a simple sequence of events. It is easiest for them to learn if the first event is an act of their own, and the second a result of that act, which gratifies or hurts them. But even in those cases their method of learning does not ordinarily, in the instances which I have observed, conform to the notion of the gradual growth or inhibition of a habit. It conforms rather to the rise of an idea, at first perhaps dimly grasped; then clearly seen; for a while waveringly held, but soon definitely established" (p. 241).

One may not safely rely upon *Mind in Evolution* for historical perspective or even for a reasonably complete survey of the facts of genetic psychology. The author has sampled the experimental literature and marshaled groups of facts in support of his theoretical position. He makes perfectly clear to us experimentalists the urgent need for further research, and his revised edition reminds us that what has been done in the last fifteen years leaves practically unaltered the fundamental ground of difference between Thorndike and Hobhouse.

Hobhouse has imagination and insight. He formulates clearly many problems and suggests, roughly, ways of solving them. The book fires one with enthusiasm for experimental inquiry. The adverse criticisms which I have expressed may seem severe, but my appreciations are no less strong, for I believe that *Mind in Evolution* has done much and will continue to aid greatly to advance a profitable genetic psychology.

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[10] Same, p. 77.

THE CONCEPT OF THE NEUTRAL IN RECENT EPISTEMOLOGY

ABOUT the time in which the concept of neutrality was going out of favor in politics it came to the front in epistemology. Some ambiguity seems to attach, however, to the concept of neutrality in the latter as in the former realm. In the interest of clarity, not in that of any particular school of thought, I wish to set forth two meanings which certainly *may* attach to the concept, with the hope that some of those who profess themselves believers in neutral entities may be led to greater explicitness.

In one sense to call anything neutral means neutral *in a specified respect or reference;* that is, with respect to the application of a particular set of alternatives. In this sense, I do not see that "neutral" means more than that a certain conception in either of its forms is inapplicable. To say, for example, that certain things are neutral with respect to the distinction of mental and material would be to say that there are things such that intelligent discussion of them is not forwarded by applying to them, without further specification, the distinctions marked out by the terms "mental-material." What is asserted is the irrelevancy of a certain type of distinction. Thus, before discussing whether a certain term, say "experience," has subjectivistic or objectivistic implications, we might have to consider whether, taken without specific qualifications, it was not rather a neutral term, a term to be used "without prejudice." Such neutral terms, understood to be aloof with reference to certain large antitheses which have had a great rôle in the history of thought, would certainly be a great aid in clearer discussion. For there is always a tendency to assume that the question is which one of two current antitheses is to be applied, when perhaps the primary question is whether either one is applicable.

In contrast with this conceivable meaning of the term neutral, which might be called the logical, stands another which might be called the metaphysical or ontological, namely, that there is a certain sort of stuff which is, intrinsically, neutral. Consequently, it is not necessary to specify any particular *respect* or *reference* in which it is taken as neutral. Rather the attempt is made to discover and describe a particular kind of material or stuff which may be called neutral exactly as a certain stuff may be called lead or wood.

It seems to me clear that nothing is gained (while there is danger that much in clarity and pertinency may be lost) in trying to bring social facts as such under the captions of "subjective" or "objective," or under those of "physical" or "mental." They are both or neither, according to the respect in which they are taken for dis-

cussion. To assert that they are "neutral" entities would then be a way of asserting one's conviction of the irrelevancy of introducing the question whether they are mental or material. The same might be said of mathematical terms. But while one might be glad to employ the term neutral if he thought that this was its connotation, one might hesitate to use it if he thought the term meant to convey something positive about the nature and structure of social things and mathematical things, something "metaphysical" over and above what the competent sociologist or mathematician would specifically discover.

Perhaps others share in my feelings that greater explicitness as to the sense in which writers use the term would conduce to clearness. It seems to me, for example, that I noted both senses in the recent discussions of the Philosophical Association. Historically speaking, the ambiguity may be detected, I think, in James's conception of pure experience, a conception having presumably certain affiliations with the contemporary conception of the neutral. At times Mr. James identifies a pure experience with experience of a peculiar subject-matter or stuff; it is of something which *antecedes* all reflection. It is a presence of a *that* which is not a *what*. Its description is highly reminiscent of some of the things said about sensation in his *Psychology*.[1] But the term pure experience is also given a radically different meaning. Contrast with the doctrine just laid down the following: "The instant field of the present is always experience in its 'pure' state, plain unqualified actuality, a simple *that*, as yet undifferentiated into thing and thought, and only virtually classifiable as objective fact or as some one's opinion about fact."[2] According to this passage, the experience in which a distinction is made between fact and opinion is itself, as a direct occurrence, "pure" of the distinction; it is "neutral" in reference to it. In this sense, pure experience is not characterized by possessing or presenting any peculiar subject-matter. The experience of any subject-matter, whether perceptual or conceptual, simple or complicated, elementary or systematized, just *as* an experience is pure or neutral. Only later on can it be referred to or classified, and so be treated as mental or physical. The following passage is, if possible, even more explicit in the same sense: "Let the reader arrest himself in the act of reading this article now. *Now* this is a pure experience. . . . Reading simply is, is there; and whether there for some one's con-

[1] Compare *Essays in Radical Empiricism*, p. 93, and its assertion that only the new born babe has pure experience, with *Principles of Psychology*, Vol. II., p. 7, and its assertion that "pure sensations can only be realized in the earliest days of life."

[2] *Radical Empiricism*, p. 74.

sciousness, or there for physical nature, is a question not yet put."[3] And he sums up by saying that the *point* of the pure experience theory is that any experience (not simply that of the new born babe) is in itself innocent of the "inner" or "outer" quality. The "inner-outer" distinction has to do with a classification made for a specific purpose and need. If we do not have the purpose, we do not classify; the distinction is irrelevant. In present language, in itself *any* experience is neutral. Consequently neutrality is not a matter of a peculiar stuff or distinctive element. This position seems to me as sound as appeal to the hypothetical experience of the new born babe is trivial or misleading. Such "purity" as the latter possesses is something to outgrow as rapidly as the baby in fact does outgrow it. It is not something to which to appeal as philosophically enlightening, much less as a philosophical norm or standard.

I venture to add that the contemporary conception of neutral entities as in themselves a particular kind of being seems to be derivable from a combination of this notion of James (which, as he pointed out, was influenced by Mach) with one obtained by an excursion of Münsterberg into the epistemology of psychology. In his article on "Psychological Atomism" he held that distinguishable sensations are molecules as it were of which the elementary atoms are not distinguishable, but which have to be assumed to satisfy certain scientific requirements.[4] Mr. Münsterberg assumed indeed that these "inexperiencable" psychical atoms were radically different from physical atoms. But bring the pure and neutral sensation of the infant (taken from James) to bear upon these elements which determine the material and processes of our complex experience (according to Münsterberg) and you get something extraordinarily like the neutral entities out of which, according to Holt, physical and mental entities are both built up.

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REVIEWS AND ABSTRACTS OF LITERATURE

Le Système Taylor et la physiologie du travail professionel. J.-M. LAHY. Paris: Masson & Cie. 1916. Pp. vi + 196.

This volume was printed over two years since, its appearance being delayed by the war until the present, with the *reprise quasi-normale de la vie.* The Taylor system is considered not simply or chiefly as a means of increasing the factory output, but in its broader relations to the community. It is found weak on the psychophysio-

[3] *Radical Empiricism,* p. 145.

[4] *Psychological Review,* Vol. VII., pp. 1–17.

logical side, and to have taken an inadequate view of its mental, not to say moral, involvements; a criticism that comes the more aptly from the French after the events of the past thirty months. In the details of method, the measurements of efficiency in work, insufficient account is taken or credit given to methods developed, notably by Marey, before those chiefly associated with the names of Taylor and Gilbreth. A short chapter formulates the concept of professional selection, but does not pretend to elaborate it. The wage-scale policies of Taylor, Halsey, and Rowan are compared, the last being the most favorably judged, the first the least. The ideas of Taylor have their chief application to gross motor performances such as are being, and will be more and more, replaced by machinery. They do not fit the higher grade, more distinctly manual operations. (In this connection may be noted a remark attributed to a British engineer, that in two more years of war, it will be possible to build a battleship from "keel to aerial" by woman labor.) The question of fatigue has been insufficiently dealt with. A system thus calculated for over-production may make a temporary increase in the output of the worker, only to be more than compensated by hastened senescence, and increased susceptibility to disease. The author suggests two measures of the *state* of fatigue, simple reaction time and blood pressure, giving a small body of observations with each. A short discussion assigns to laboratory measurements a rôle distinctly subordinate to that of measurements in actual factory performance. But the movement analyses on which the system is based are fallacious because they eliminate necessary rest periods; measurements of total time (*chronométrage global*) are the more scientific because they take proper account of these mental factors. The system values the man for nothing but the price of his product. Its tendency is actually and deliberately to lower the standard of labor employed (pp. 177–178).

The system is then indicted not on the score of immediate commercial value, but for its social significance. Under color of immediate increase in earning capacity, the system undermines the worker's physique and morale. Great industrial organizations have other essential functions than turning out their maximum of manufactured products. The restraint that marks the volume's language, often, one feels, under much provocation, does not lessen the effectiveness of this interesting and thoughtful contribution to economic sociology.

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JOURNALS AND NEW BOOKS

THE BRITISH JOURNAL OF PSYCHOLOGY. September, 1916. *A Hierarchy without a Great Factor* (pp. 271–281): GODFREY H. THOMSON. – The object of the paper is to show that the cases brought forward by Professor Spearman in favor of the existence of general ability are by no means "crucial." "It has here been shown that a certain set of correlation coefficients, which we *know* to contain no general factor, would be claimed by Professor Spearman as giving further support to the existence of such a factor. *There is therefore nothing to show whether the many cases brought forward by him really* contain a general factor or not." Work on correlation and hierarchies has shown: (1) Since correlation does actually exist between tests, there must be either group factors or a general factor present, or both. (2) If there is no general factor, then it is probable that the group factors *overlap* in a complicated fashion, for otherwise there would be no hierarchy. But even this is by no means certain, for as a rule very few columns reach the correlation standard which Professor Spearman has laid down, and these few may be among the minority which do not correlate highly even on Thorndike's theory of non-overlapping group factors. (3) There is not the slightest mathematical evidence so far forthcoming which will enable us to distinguish between *overlapping* group factors and a general factor. *Some Comments on Mr. Thomson's Paper* (pp. 282–285): C. SPEARMAN. – "For all that can be seen," the "special arrangement" used by Mr. Thomson "might involve psychological absurdities. It might even reintroduce the general factor by a back door. And in point of fact, as my next paper will show, it does both." *The Relations between Magic and Animism* (pp. 285–316): CARETH READ. – Wundt's and Frazer's theories are mentioned. The following topics are discussed: (1) Ideas and Practises of Magic adopted by Animism; (2) Retrogradation; (3) Spirits inspire magicians; (4) Spirits operate by magic; (5) Spirits are controlled by magic. *The Prevalence of Spatial Contrast in Visual Perception* (pp. 317–326): W. G. SMITH. – The object of the paper is to present observations regarding the modifications in spatial perception which are introduced when a line in the visual field, whose length is being estimated, is accompanied by another line parallel to it and of varying length. The subjects were 20 men and 20 women, members of the class of psychology in the University of Edinburgh during the summer of 1913. The writer concludes: "There is little or no evidence in the general results of this investigation dealing with parallel lines that contrast is distinctly and generally operative in modifying the apparent length of a line. On the other hand, there are certain facts which may be regarded as suggesting that it is present together with other conditions,

such as confluence, which in certain situations neutralize its influence, but in others permit it to appear. When the subjects are divided into groups of men and women it is that the results of the former group are more readily interpreted in accordance with contrast, and those of the latter in accordance with confluence. It is found that, while the average length of the reproduced is less than that of the presented line with both men and women, the tendency towards decrease is markedly greater in the group of men." *A Contribution to the Study of Fatigue* (pp. 327–350): MAY SMITH.–The problem may be expressed in the following questions: (1) Is it possible to measure fatigue objectively? (2) What are the immediate effects of fatigue? Do they differ in any measurable degree from the remoter effects? (3) How long does it take to return to a normal condition as estimated by an objective standard after undoubted fatigue, and what is the nature of the recovery curve? (4) What is the effect of fatigue on an already fatigued state? (5) What is the relation between fatigue as experienced by the fatigued person and fatigue as estimated by some objective standard? The tests used were the Dotting Machine Experiment and Mr. McDougall's modified form of it; the windmill, an illusion of reversible perspective; the learning and relearning of nonsense syllables; tapping test for speed. The writer concludes from the evidence afforded by these experiments that (1) Fatigue as estimated objectively involves two distinct phases; a phase when fatigue acts apparently as a stimulant, so that work demanding concentrated attention is done more effectively than under normal conditions and a phase of longer duration when the body is attempting to make good its losses, which phase is characterized by a general loss of accuracy of aiming, in a weaking of the powers of inhibition, as shown by the increase in the number of uncontrolled dots, in marked loss of the power of concentration, as shown by the inability to attend to the words of a list, and in loss of retentiveness, as instanced by the inability to reproduce the words when the connections have been realized, and in the increased number of repetitions required to relearn a group of nonsense syllables. (2) The subjective feelings bear no relation to the objective demonstration of fatigue, extremely bad work being not infrequently accompanied by a conviction that it is unusually good. (3) There is the suggestion that it is possible to become partially immune to a particular form of fatigue. (4) The time taken to return to a normal condition after the loss of but a few hours' sleep is disproportionately great; and this return is gradual, but irregular. (5) Fatigue acts on a fatigued state as it does on the normal, *i. e.*, while the strain is present there is improvement, but the return to a reliable normal is considerably delayed. *The Influence of the Form of a Question* (pp. 351–389): BERNARD MUSCIO.–The specific aim was to

compare certain question forms in regard to their respective influence upon answers, it being assumed, as a result of previous experiments in the psychology of evidence, that the answer to a question is under certain conditions partly determined by the question's form. The conclusions are: (1) Changing the indefinite *a* into the definite *the* article in a question form decreases suggestiveness, decreases caution, decreases reliability. (2) Introducing a negative into a question form increases suggestiveness, decreases caution, decreases reliability. (3) Changing a subjective-direction into an objective-direction question form decreases suggestiveness, decreases caution, decreases reliability. (4) Including both the definite article and a negative in the one question form, increases the caution and increases the reliability of the resulting form compared either with the form containing the indefinite article and a negative or with that containing the definite article and no negative. (5) Including both the objective-direction and a negative in the question form decreases the suggestiveness, decreases the caution, and increases the reliability of the resulting form compared with that containing the subjective-direction and a negative. (6) The implicative question form is lower than all the other question forms investigated for suggestiveness, caution, and reliability. (7) The incomplete disjunction question form possesses a relatively high suggestiveness, a relatively low caution, and a relatively low reliability. The general conclusion is that the most reliable form question is the subjective-direction question form which contains neither a negative nor the definite article. *Publications Recently Received.*

Adler, Alfred. Study of Organ Inferiority and its Psychical Compensation: A Contribution to Clinical Medicine. Tr. by Smith Ely Jelliffe. Nervous and Mental Disease Monograph Series, No. 24. New York: Nervous and Mental Disease Publishing Company. 1917. Pp. x + 86.

Keith, A. Berriedale, and Carnoy, Albert J. The Mythology of All Races: Indian and Iranian. Volume VI. Boston: Marshall Jones Company. 1917. Pp. ix + 404.

Stecher, Lorle Ida. The Effect of Humidity on Nervousness and on General Efficiency. Archives of Psychology, No. 38. Edited by R. S. Woodworth. New York: The Science Press. 1916. Pp. v + 94.

NOTES AND NEWS

A MEETING of the Aristotelian Society was held in London on January 8, Dr. H. Wildon Carr, president, in the chair.

A paper was read by Mr. C. D. Broad on "Hume's Theory of the Credibility of Miracles." Hume's general argument against mirracles is, he maintained, weak. On Hume's definition two miracles of the same kind (*e. g.*, two raisings from the dead) could not occur. Yet believers in miracles hold this to be possible. If one reported exception to an alleged law ought to make *no* difference to the strength of our belief in it, why should two or more? But if one reported exception makes *some* difference in the strength of our belief in the law, how can we be sure *a priori* that it may not in certain cases reduce our belief to doubt or disbelief? If people had acted on Hume's theory, many scientific discoveries would not have been made. For exceptions to many alleged general laws ought, if Hume be right, to have been treated, except by their discoverers, as alleged miracles, and disbelieved. Since those who observe the exceptions are experimentalists, and those who explain them are often mathematicians, such exceptions would never have been explained if the mathematicians had taken up Hume's attitude. Actually the belief of most people in most laws of nature depends on testimony. Hence the arguments for and against an alleged miracle are arguments of testimony against testimony. Strictly, in accordance with his view of belief and induction, Hume had no right to talk about what we *ought* to believe as to matters of fact, but only to discuss the causes of our beliefs. And love of the wonderful is as good a cause of belief in a miracle as constant experience is a cause of belief in a natural law.

PROFESSOR S. P. HAYES has leave of absence from Mount Holyoke College for the present semester. He is spending the half-year at the Pennsylvania Institution for the Blind in Overbrook, where he is giving mental tests and making a study of the psychology of the blind. His work at Mount Holyoke is in charge of Dr. J. H. Coffin, professor of philosophy and psychology in Earlham College.

DR. ROBERT M. YERKES, of the department of psychology of Harvard University, and psychologist to the psychopathic hospital of Boston, lectured recently before the Minnesota chapter of Sigma Xi on "Psychological Methods of Examination and Diagnosis."

PROFESSOR JAMES ROWLAND ANGELL, of the University of Chicago, is giving a course of lectures on "The Makers of Modern Psychology" on the Spencer Foundation at Union College.